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ABSTRACT

This issue of "Currents" reviews some of the recent developments in planning techniques for colleges and universities; statewide or regional planning problems are not considered. Following a discussion of planning and its benefits, the process of planning is reviewed and two case studies of planning are examined. Special attention is focused on goals and such programming strategies as Planning-Programming-Budgeting Systems and computer-assisted planning. (Author)

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COLLEGE AND UNIVERSITY PLANNING

For over a decade, authorities on higher education have warned colleges and universities of the necessity for long-range planning. A December 1970 report by the Carnegie Commission indicates that 70% of the 41 public and private institutions studied were either in financial difficulty or "headed for trouble" (Cheit, 1970). Originally conceived as a tool for dealing with expanding enrollments, planning today is chiefly regarded as a means of wisely allocating increasingly limited resources.

This issue of *Currents* reviews some of the recent developments in planning techniques for colleges and universities; statewide or regional planning problems are not considered, although public institutions can and do utilize the kinds of planning strategies outlined in this review within the framework of state master plans. Following a discussion of planning and its benefits, the process of planning is reviewed and two case studies of planning are examined. Since the specification of institutional goals and the evaluation of alternative programs to attain those goals are so crucial to successful planning, special attention will be focused on goals and such programming strategies as Planning-Programming-Budgeting Systems and computer-assisted planning.

Benefits of planning

Essentially, *planning* refers to a process whereby an institution defines its philosophy and mission, establishes goals in keeping with that philosophy, devises programs to attain the goals, marshalls its resources behind the programs, and evaluates the results (Salmon, 1969). Although a blueprint for action may emerge, the planning process is focused on gaining an understanding of the interrelationships among various components of an institution and their relevance to the institution's purposes. As Robert Smith (1969) noted, " . . . planning is not making a lot of decisions now about what to do in the future. Rather it is an attempt . . . to . . . organize the variables which must be dealt with into some coherent pattern." Thus, the major benefit of planning is not that it specifies projections or programs, but that it clarifies goals, assesses strengths and weaknesses of the institution, and evaluates alternatives. Planning also offers other advantages (Smith, 1969): (1) it aids the allocation of resources amongst competing demands; (2) sources of support such as government and foundations will support those institutions with the best defined missions; (3) controlled development is preferable to the aimless drifting from crisis to crisis which has characterized higher education in the past; and (4) defining specific missions will maintain the diversity that has traditionally characterized American higher education.

Developing a plan

While numerous guides to planning have appeared in journals, speeches, and internal memoranda of firms specializing in institutional planning, their approaches tend to be similar. John Bolin's *Institutional Long-Range Planning* (1969) carefully discusses many aspects of the planning process.

Bolin first addresses the question of who should be involved in planning. He argues that since the plan will affect everyone associated with the institution, broad participation should be encouraged. Practically speaking, however, the working team has to be restricted to a relatively small group representative of the major constituencies of the institution. Additional faculty members can be utilized as members of study groups. Consultants are also desirable for maintaining objectivity and keeping the group focused on the study's goals; Bolin warns, however, that no consultant can possibly replace the institution's own planning team with its intimate understanding of the institution.

Another critical first step for the plan is its organization. Bolin stresses that

> Too often in the past, long-range studies have been lacking in conceptualization. In reality, they have been "rush" projects, hurriedly designed to collect some data and "rough out" some possible directions which the institution may follow.

Acknowledging that no single format can apply to all institutions, he outlines steps which must be incorporated into every plan:

1. The plan must specify what the institution is going to do during the plan and what use will be made of the results.

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2. The plan should incorporate analysis of the local community, as well as national trends in terms of economy, enrollment potential, and emphasis on different types of education.
3. The institution should define what the institution sees as its mission. The aims must be specific and functional and avoid the generalities found in the college catalogue.
4. The institution should be studied and an appraisal made of the potential trends. Data should be collected in such areas as administration, faculty, students, instructional program, library facilities, and financing.
5. A projection should be made of future student populations, recruiting conditions, and availability of staff and faculty.
6. New goals and objectives should be established.
7. Guidelines should be set up to evaluate and revise the plan.

Within this framework, it is possible to devise programs and strategies to reach specified goals and objectives. Establishment of provisions for review is particularly crucial; for as initial objectives are attained, they become part of the base on which new objectives are developed. Planning therefore becomes a continual repetitive activity.

Case studies

Bethany Nazarene College (Bethany, Oklahoma) began its self-study with a clearly defined concept of what the study would encompass and how the results were to be applied. Two reports (Frame, 1969; 1970) have emerged: one describes the study's design, and the other covers activities and modifications in the design as the study progressed. A final report will outline findings and recommendations.

An orientation meeting was held to discuss long-range planning in general, and the purposes of the study at Bethany Nazarene in particular. It was decided that three consultants would be used as general advisors on educational issues. Seven study committees were established: philosophy and objectives, instruction, students, faculty, physical facilities, finance, and administration. Each study committee was directed to divide into two subcommittees; one to study conditions on Bethany Nazarene's campus, the other to study trends on other campuses. The subcommittees were to reunite after gathering data to make recommendations.

A separate group, the resources committee, was formed to ensure that the study committees would have information they needed for their investigations. Approximately 100 colleges were selected by the resources committee as a reference, and bulletins, self-studies, and similar materials were requested from these institutions. Periodicals and journals were examined, and ERIC documents were screened and ordered. A steering committee to monitor the progress of the study was also appointed.

To maintain internal consistency with the study and to develop coherence within the recommendations, an interesting system of sequential reporting was adopted. It was based on the fact that some preliminary reports were needed before others could be developed:

> . . . institutional posture as defined by the philosophy and objectives study committee is to be clarified before an instructional program to implement that philosophy can be described. The instructional program will relate to students and must be defined before faculty can be secured to implement the instructional program. The physical facilities must accommodate the faculty and students and flow from the needs of the instructional program. The financial needs represent the final step of the chain. Finally, an administrative structure must be developed consistent with the other six areas.

The study was divided into two phases. Phase I was to take place throughout the first academic year and conclude with the presentation of the preliminary reports and a "reaction meeting." Originally, the college envisioned a common meeting on campus at which each report would be presented and the reactions of all segments of the community sought. This did not prove feasible, and a representative group finally went into retreat over a weekend. Phase II was designed to begin the following academic year and take advantage of the reactions. At the end of phase II, each committee was to integrate all data into a final report, which would include recommendations for immediate implementation, 5-year implementation, and long-term goals and suggestions. All final reports were to be sent to the steering committee for compilation and presentation to the president and board of trustees.

This general approach to planning, has been used on many campuses. Southern Methodist University in 1963 developed a plan using the self-study technique; the University of Missouri has also recently completed a similar general plan for its four campuses ("Long-Range Planning", 1968). Their reports demonstrate that the self-evaluative approach to planning can be used by diverse institutions, and that larger institutions can utilize their resources in the self-study in different manners.

The most frequent complaint about this type of planning involves the length of time required. Missouri and Bethany Nazarene took 2 years to develop a plan; SMU's plan took a year. The length of time involved not only dissuades some institutions from planning, but also encourages the view that planning is an activity the institution should "gear up" for every 10 years. There are other approaches to planning, however, which reduce the time involved.

Shorter approaches

Colgate University and the American Foundation for Management Research developed one approach which was adopted by several other schools (Smith, 1969). Their program calls for two intensive 5-day sessions at the AFMR's conference center separated by a period to gather data. Between 6 and 12 top-level administrators participate.

In the first 5-day session, the attempt is made to establish a foundation for planning by:
1. defining the basic philosophy of the institution, its mission, general policies, organization, and basic characteristics
2. locating the institution in its own peculiar environment
3. analyzing resources, strengths and weaknesses
4. formulating assumptions about the future
5. tentatively establishing objectives for development and specific targets during the planning period
6. determining the information required to study the institution
7. assigning specific data-gathering tasks to team members

After this phase, data gathering begins. Depending upon the complexity of the institution and availability of the data, this

phase can last from 2 to 6 months. Two weeks before the second 5-day session begins, the data are given to the director of the study—a member of AFMR trained in guiding the team. He indexes and analyzes the data so that the planners can readily see the quantifiable aspects of the institution and thereby evaluate the feasibility of the preliminary goals.

The second 5-day session concentrates on analyzing of data to identify trends within the institution and its environment. Then, the planners proceed to:

1. define "planning gaps"—the differences between where the institution would go on its own momentum and where the planners want it to go
2. modify preliminary objectives
3. analyze alternative courses of action
4. break down the strategic goals into specific programs and action assignments with standards for accomplishment
5. design specifications for supplementary planning efforts to be carried out by component parts of the institution
6. set the timing and format in which the planning decisions will be made and communicated to the institution
7. develop a guide for future planning.

In agreement with the general tone of the literature on planning, Smith argues that although this procedure is a forced process, its value lies in the fact that it provides the planning team with the experience needed to establish a regular planning procedure. In addition to providing this training ground for administrators, it also provides a "comprehensive plan for action."

Goal determination

The process of establishing goals, the broad aims that define the nature of an institution, can be difficult and frustrating. Many planners see goal determination as the first order of business in the belief that specific objectives and programs will flow from the goals. Although goals, objectives, and programs must be related, experts on planning are urging increasingly that goal determination be delayed until factual data on the institution are gathered. As Bolin states: "until the administration and staff . . . can find out what they have to work with, only hollow, meaningless objectives based on intuition or hope rather than knowledge can be defined." Smith concurs: "unless discussion of goals is rather deliberately delayed, the planning team is apt to get hopelessly confused with regard to the necessary separation of *means* and *ends*."

Goals can be viewed as both means and ends, and several distinctions have been made between types of goals. Gross and Grambsch (1968) have constrasted "output goals," which involve a product such as teaching or research, with "support goals," designed to maintain the institution, such as fundraising. Richard Peterson (1970) reviewing the literature on institutional goals notes that several experts on goals have distinguished between "official goals" or the stated general purposes of the institution, and "operative goals" the actual operating policies of the institution which tell the investigator what the institution really is trying to do.

Peterson notes further that the "goal determination process must be regarded universally on campus as fair if the resulting goal structure is to have legitimacy." Therefore he views the Delphi Technique of goal determination as preferable to administrative or even faculty decisionmaking. The Delphi Technique involves: (1) asking all of the various institutional constituencies to list their opinions on goals; (2) requesting them to evaluate the list of goals in terms of importance; (3) forwarding the results to each participant and asking those who disagree to revise their opinions or state the reason for disagreement; and (4) repeating the last step with the updated list. Planners using this technique, says Peterson, attain a wide range of ideas about goals, a ranking of priorities, and a degree of consensus among the various constituencies.

Programming strategies

New aids to institutional planning, and particularly the programming aspect of planning, have developed in the past decade from systems analysis. Unfortunately, documents describing these new developments are frequently incomprehensible to the lay reader since they are often highly technical in tone, replete with abbreviations and acronyms, and the terminology has yet to be standardized. Moreover, the new information, budgeting, and planning techniques are very closely interrelated. Joseph Inman (1971) says that it is "impossible to develop any one of the three systems independently; work toward the development of any one system inevitably will lead to the implementation of some elements of the other two systems."

Basically, the systems analysis approach to planning stresses the totality of institutional operations by

> [looking] at university operations in terms of inputs, process, and outputs. Systems analysis seeks to provide an understanding and an information base for decision-making which will permit careful planning, appropriate allocation of resources in terms of desired outputs, and evaluation of effectiveness and efficiency (Millett, 1968).

Having investigated the organization in this fashion, the planner is assisted in devising suitable programs to achieve his desired objectives.

A management information system (MIS) is an aid to the programming process, and basically forms the "information base" referred to by Millett. An MIS implies a coherent system of gathering the data needed for institutional decisionmaking *in usable form.* As H.E. Koenig (1968) has noted, although many offices have devised systems of collecting and maintaining data, most of them have not coordinated their sources of data or processing routines. Therefore, in attempting to view the university as a system rather than as a series of separate operating units, "It is usual to find that some of the data required are not available at all, some are of questionable accuracy, and some are stored in different locations using different coding systems." Currently the Western Interstate Commission for Higher Education (Johnson and Katzenmeyer, 1969) is attempting to devise an information system that will be broadly applicable to all institutions and appropriate for use in decisionmaking.

The Planning-Programming-Budgeting System (PPBS) is another outgrowth of systems analysis and it demonstrates the confusion that new techniques are bringing to college and university administrators. The confusion arises not only from the inexperience of planners, but also because technical experts advocating this system use the term with different meanings.

> The term "program budgeting" means different things to different people. To some it suggests no more than restructuring budget exhibits, accumulating costs in more meaningful categories. To others a program budget implies a budget that employs a longer time horizon than the commonly found projection limited to one year. To still other, the concept of program budgeting includes the use of cost-utility analysis, a logical and measuring relation of inputs and outputs (Smith, 1967).

Program budgeting can actually be defined as containing all of those characteristics: it is an attempt to relate financial expenditures to broad program objectives so that the financial consequencies of programs undertaken today can be projected for a period of years. Since it is primarily concerned with programs, this type of budget is more meaningful for planners than the traditional line item budget. The use of PPB on campus is being encouraged through workshops and budgeting manuals (Peat, Marwick, Mitchell and Co., 1970), and its advocates, if not its use, seem to be increasing.

A PPB system presupposes the formulation of a general, long-range plan specifying institutional goals; programming—or the allocation of resources to meet specific objectives—can then be undertaken. As Harry Williams (1966) notes:

> No university administration should be satisfied with a budget comprising major object classifications (personal services, supplies, and equipment). It is true that all these items are contained within any homogeneous activity on the campus, but it is not enough to know merely that all activities comprise various kinds of expenditures. The important questions are: . . . What purpose is served by that budgetary unit? . . . What resources are required to support this budgetary unit through some span of time?

To answer these questions, Williams distinguishes between major programs and program elements. A major program he defines as "a collection of integrated resources that function as an entity to promote in rather specific directions the long-range purposes . . . of the institution." A college within a university, a major school, or the graduate division might be considered major programs. Two or more program elements make up a major program and are "a relatively homogeneous aggregation of resources related to and part of a larger major program." Program elements within a college could be a department or the cirriculum required in a particular major. As budget requests are passed from the departmental level to the dean's office, to the president, and finally to a budget review committee, Williams sees a repetitive process in which program elements are related to major programs and objectives in a way that ensures the allocation of funds in the best long-range interests of the institution.

Harry Hartley (1968) claims that a PBB approach to budgeting has six advantages:

1. it is analytic, in that a systems approach is used to examine alternatives
2. planning and means-end considerations are used in reaching a particular budget and projections of that budget
3. it relates goals to specified programs and relates inputs to outputs
4. budgeting relates programs to resources
5. structurally, PPBS has an output orientation
6. administratively, PPBS eases information analysis and allows for rational choices.

Wesleyan University provides a specific illustration of how a programming budget might operate (Etherington and Vancil, 1969). Wesleyan decided to consider undergraduate and graduate education as two of their major programs. Since faculty salaries as a line item do not distinguish between the two programs, the registrar's office was asked to provide figures on the amount of time each professor spent on each. When divided between undergraduate and graduate teaching, salaries could therefore be viewed as inputs into the major programs rather than a mere expense.

Another institution might decide to make teaching, research, and public service the major programs, and attempt to divide the budget along those lines. For example, rather than requesting a fixed amount for salaries, and another amount for acquisitions, the library would be expected to place such expenses as library orientation courses and teaching machines in the teaching program, acquisition of rare books or research assistance for scholars in the research program, and workshops for local libraries in the public service program. The planner reviewing these budgetary request could see how the cost of maintaining the library contributes to the long-range objectives of the institution.

Computers

Within the last few years, increasing attention has focused on the computer as a tool for university planning. Juan Casasco (1970) observes that before the advent of the computer, many decisions were made "on the basis of limited information, unsupported theories, and scanty empirical analysis." He feels that the computer can help rectify this situation by allowing the decision maker to take more variables into consideration. Salmon (1969) adds that the computer minimizes much of the tedium of collecting, storing, and recalling facts.

Several companies have developed computer simulations, or models of operating institutions, which are in use on several widely diverse campuses. George Keane (1971) describes a model as "simply an effort to define how a university . . . behaves as a system; that is the demand that is created by the curriculum and the student enrollment on the facilities and the finances and people resources of the institution." Robert Wallhaus (Johnson and Katzenmeyer, 1969) notes that a model is simply a representation of reality and as such, its

> primary purpose . . . is to facilitate modification and experimentation of reality. It may be infeasible and uneconomical to change the real system for purposes of investigating new configurations or predicting future behavior . . . it would be uneconomical indeed to eliminate the curriculum in mathematics in order to observe the effect on the institution . . . . It is often practical, however, to modify *a model* of the real system and to assume that the conclusions drawn are also valid for the real system.

The process of simulation depends upon mathematics . . . to represent organization of functions, and involves the assignment of quantitative values and relationships to elements composing the organization (Salmon, 1969). Kean writes that it is

possible to quantify the current status of an institution in terms of such variables as the number of students, their class distribution, tuition, available classrooms and number of faculty members. Based on this information, only two factors can change the institution in the next 5 or 10 years: planning decisions and the environment. The job of the model-builder, therefore, is to collect data on the institution as it exists, construct a model relating the activities that take place within the institution to the depletion of its resources, and make allowances for such decision variables as changed admission policies, and such environmental variables as changes in construction costs. Based on these data, the computer can answer such questions as, "What will result from our raising our salaries to the 'A' level on the AAUP scale?" Depending upon the question, the computer can immediately respond with the consequences for the following year, or for each year over the next 10 years. If the answer to a question demonstrates that the plan is not feasible, the question can be modified: "What will happen if we increase salaries while increasing income from endowment." If this approach appears useful, then a program to increase endowment income must be devised. The planner would then have to decide whether to choose a program to increase the size of the endowment, or find a better way to invest the current fund. The number of possible questions and combinations of questions that the planner can ask is endless, and he can continue until satisfied that he has found the best approach to solving his institution's problems.

Keane has cited two great advantages of the use of the computer in planning. The first is the number of questions the planner can ask the computer. The computer can make an incredible number of computations and present the results immediately. Therefore, virtually all possible alternatives can be examined by the policy maker. Since innumerable "what if" situations can be predicated and answered immediately, no suggestions need be discarded out-of-hand as being impossible or too expensive.

Moreover, the computer is not prone to wishful thinking. Keane notes that the program "makes explicit very often what is implicit. Once you have set up the logic of the model, and you have defined how your institution works, the model does not let you forget it." He tells of one private institution that hoped to solve its financial difficulties by increasing enrollment and tuition income. However, it quickly became apparent that to increase enrollment the admissions office would need several times the number of applicants received in recent years and, obviously, this would not be attained without a major change in admissions standards or recruiting practices.

Limitations of new techniques

The literature and the advocates of these new approaches to planning stress that they are only tools for the use of planners and that goals and objectives must be formulated independently. Koenig, notes that simulation models are not concerned with the quality of education or educational objectives as such but rather with the flow and utilization of resources. And, says a Systems Research Group report ("The Development and Implementation . . . , 1970), the model will not evaluate the quality of education, predict income, or define optimum class size; but, it will predict space and resource requirements for different programs, and define which programs can be maintained under different arrangements.

There are additional problems to be considered in the new approaches. Frequently, the potential user is cautioned to weigh the cost of initiating and maintaining even MIS and PPB systems against the utility of the information derived from them (Minter and Lawrence, 1969; Alden, 1970). Simulations are also expensive, and since most campuses do not have the personnel capable of developing the model (or the PPBS), planners must rely on models designed commercially. Observers are also concerned that some aspects of complex institutions are not subject to quantification, and that systems analysis might impose constraints upon innovation and creativity in planning. (Alden, 1970) Homer Babbidge (Knorr, 1965) is particularly concerned that planners will lose sight of the real purpose of planning, the clarifying of objectives, and become "suffocated by considerations of strategy and tactics."

Conclusions

Plans can, of course, fail. As Bolin and Eurich point out, they can fail because either top administrators or the faculty as a whole do not accept the necessity of planning, or refuse to accept the new directions outlined for the institutions. Communication between the planning group and the rest of the institution is therefore crucial.

Plans can also fail because the environment changes drastically (Bolin, 1969). Few planners in the 1950's foresaw the infusion of federal funds into higher education in the 1960's and the subsequent reduction in support. Even fewer believed Cartter's 1965 arguments that graduate schools were producing too many PhDs, and that new programs were unwise. However, plans that are unable to adapt to changing circumstances are exactly the kind that experts oppose. As Eurich says,

> We must overcome the tendency to treat plans as static. Too many institutions undertake the Herculean task of preparing a plan only to rest back in the false assurance that the job has been done . . . . . But today events are moving so quickly that planning must be recognized as a continuing, corrective effort . . . .

Babbidge substantially agrees and notes that plans "can become a conservative even stultifying influence in the life of the institution." In his view, the main benefits of planning lie in defining a clear set of goals, outlining a means of attaining those goals, and insisting that goals remain the test of whether or not to accept new proposals. A plan devised for a 10-year period should not hinder a dynamic institution.

A related theme appears even in literature on the new systems approaches:

> the greatest benefit to be derived from model-building does *not* come from the end product model but rather from the process itself . . . . The process of modeling encourages constant analysis, reappraisal and questioning of assumptions . . . . (Etherington and Vancil, 1969)

Even without developing a detailed plan, the planning process allows the institution to examine itself, analyze its resources, define its mission, and set a general direction for the future.

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